ICLEI – Cities for Climate Protection
February 7, 2002 Seattle, WA
Keynote Speech - Denis Hayes

On a flight to the east coast last year, a gray-suited businessman sitting next to me was reading a copy of *U.S. News & World Report*. It had a dramatic photograph of a hurricane on the cover. The cover story headline referred to global warming causing more extreme weather. Pointing to the photo of streets filled with water, my seatmate remarked, "I guess it's time to get myself a sports utility vehicle."

To give you some idea of how narrow my circle of friends is, it literally did not occur to me that he might not be joking.

Thinking he was making an ironic comment about emissions of greenhouse gases by these urban assault vehicles, I played along. I gave him a strong pitch that he should buy Daimler-Chrysler's new monster, the Unimog. "It weighs 12,500 pounds," I said, "as much as two giant Chevrolet Suburbans. You could crush Ford Explorers like gnats. And forget flooding. It's 9 feet 7 inches tall – about as high as a basketball hoop. You have to climb three steps to enter the cab. It will keep you, even if the oceans rise 2 or 3 feet."

To my horror, my seatmate (for the next 5 hours!) was really interested.

It instantly became clear that this guy had never connected the dots between 6-ton Sports Utility Vehicles, America's consumption of 42 percent of the world's gasoline, and the climate change that threatened to flood his home town.

This failure to connect the dots has always been common in the national debate over climate change. Bill Clinton pledged in 1993 to reduce greenhouse gas emissions to 1990 levels by 2000 but he never proposed a budget toward that end, he proposed no regulations, he proposed no tax incentives.

In the last year of the Clinton Administration, America produced 12 percent more greenhouse gases than when he assumed office. Twelve percent of United States emissions is a big number. Just the GROWTH during the Clinton years equals more carbon dioxide than the TOTAL emitted by, say, England or France last year. Clinton did not connect the dots.

In the climate area, President Bush raised disconnectedness to an art form. He disconnected America from the world. At the climate summit in Bonn, Germany, America's negotiators found themselves utterly and completely isolated. The final line-up: 178 nations to one.

Although I've not done a huge research project on this, I can't recall a single historic precedent where a major global power, on a treaty of extraordinary international importance, did not have a single ally.

Thinking about all this, I decided to use my time here today to connect the dots between climate change, carbon-neutral energy sources, and the role of cities in solving this global problem in ways that bring vitality to urban life, increase jobs in our communities, and foster an important new American industry.

That's a tall order for a short speech. So I decided to construct it as a series of answers to questions that I routinely encounter – and that you might encounter as well.

Is climate change real? Isn't there still a serious scientific debate about whether we are influencing the climate?

Thirty years ago, there was a great deal of debate over the impact of fossil fuels on climate. Some reputable scientists said it would lead to global cooling. Others said it would lead to warming, but that on balance that warming would be a good thing. Some said climate change could bring an irreversible disaster of unparalleled scope. Many just pointed to all the noise in the data.

The upshot of the debate was that we started taking the issue seriously, and doing careful measurement and analysis.

Eventually, I felt confident enough to stick my neck out a little and author a review containing the following conclusion:

> While uncertainties remain, these are mostly over matters of scale and rate, rather than direction. . . . All the most widely accepted models of climatic behavior predict that continued growth in atmospheric CO_2 will increase the planet's surface temperature.

I published that paper in March of 1979 – 23 years ago. At that point, it represented a majority opinion in the world climatological and geophysical communities. But it did not yet represent a consensus.

Since then, however, billions of dollars of research have put the basic controversy behind us. Several studies a week, published in the world's most prestigious scientific journals, confirm that the earth is heating up and that so-called anthropogenic sources – human pollution – is the most important cause. Yesterday's issue of *Nature* had two more articles demonstrating that the frequency of severe floods has increased through the 20th century, and that future problems with extreme weather events are likely to be worse than the consensus models are currently predicting.

Last year was the second hottest year on record. That means that nine of the 10 hottest years since 1860 have occurred since 1990.

Phillip Mote has just given you an excellent survey of the current science. Six pages in yesterday's 440-page annual report by the Council of Economic Advisors gave a preview of Bush Administration's soon-to-be-released climate policy. It begins: "The uncertainty surrounding the science of climate change suggests that some modesty is in order" and recommends that America not even attempt to reduce emissions of CO2 and other greenhouse gases.

Uncertainty? Let me put it this way.

Scientific support for human-caused climate change now approximates the level of support for the proposition that the Earth revolves around the sun, and not vice versa.

<u>If that is true, why does everyone think there is a debate?</u>

There are a half-dozen climate scientists who dispute the consensus. They are generally dismissed because they tend either to be right-wing political extremists, or else their research is sponsored by the coal industry. Only one or two of them has published anything on climate in a refereed journal in the last ten years.

They disagree with the National Academy of Sciences, the British Royal Academy, the American Geophysical Union, the World Meteorological Organization, the International Panel on Climate Change, the National Center for Atmospheric Research, NASA, and every other major scientific organization that has sponsored a report on the issue.

As my old friend Ross Gelbspan will document at lunch, it's easy to think there is a "debate" because a formidable public relations campaign, sponsored by Global Climate Coalition, the coal industry, and Exxon has spent a huge amount of money inserting the same handful of people into news stories, television talk shows, paid advertisements, etc.

Besides, everyone doesn't think there is a debate.

<u>Who Doesn't Think There is a Debate?</u>

The smartest companies, for starts. When British Petroleum resigned from the Global Climate Coalition, it was front-page news. Since then Shell Oil, Amoco, Arco, Texaco, Ford, Daimler-Chrysler, and General Motors have all quietly resigned.

Every major automobile manufacturer in the world is now heavily invested in fuel cells. General Motors recently issued a press release for its new prototype zero-emissions fuel cell vehicle that. General Electric and Plug Power have a joint venture in stationery fuel cells with plans to sell one million units for factories, shopping centers, hospitals, universities, etc. by the end of next year.

Honda brought its small hybrid "Insight" model to the American market a couple of years ago, and will offer a hybrid Civic soon. I own a 5-passenger Toyota hybrid, the Prius, with a great sound system, comfortable seats, power everything, and a spacious truck. It cost $21,000, and averaged 54 miles per gallon on the trip last weekend.

DuPont has committed to keeping its total energy use flat through the next ten years, to obtain 10 percent of its total energy in 2010 from renewable sources, and to produce 65 percent less greenhouse gases in 2010 than it produced in 1990. Promises are cheap, you may think, but DuPont has *already* held its energy use flat since 1991, and it has already reduced its greenhouse gas emissions by 45 percent from 1990.

BP is now the world's third largest manufacturer of solar cells – behind two Japanese companies – and an ardent supporter of the Kyoto Protocols on climate change. Whether or not Kyoto is ratified, BP has committed to meeting Kyoto's greenhouse gas reduction goals for the company. Shell is forecasting that renewable energy will meet half of all global energy demand by 2050 – a market opportunity of tens of *trillions* of dollars.

Johnson & Johnson has also pledged to implement Kyoto whether the U.S. Senate ever ratifies the treaty or not. As a company, it will reduce greenhouse gas emissions 7 percent below 1990 levels by 2010 – with an interim goal of 4 percent in the first five years. This pledge covers 150 facilities in 50 countries.

IBM, which has already reduced its CO_2 emissions by 20 percent from 1990 levels, has stunningly committed to further reductions of 4 percent *a year* into the indefinite future. The pledge covers its 30 manufacturing facilities in 14 countries.

I could go on and on. The important thing, though, is that virtually no one in the United States knows anything that I've just said. It's all been reported, but in scattered little stories that disappear in the noise. Moreover, every new study that is reported comes with the obligatory rejoinder from one the half-dozen hired guns that the Global Climate Coalition and its fellow travelers pay to say, "The science is not all in yet."

Of course, that is true. The science will not be all in until Florida is under water.

But the relationship between CO2 emissions and climate change is as clear as the relationship between smoking and lung cancer, and the tactics of the Global Climate Coalition echo those of the Tobacco Institute.

Then Why is President Bush Ignoring Science – Including the Report that He Himself Commissioned from the National Academy of Sciences?

I recently read *Galileo's Daughter* and was struck by the resemblance of President Bush to Pope Urban VIII. As a young, very political cleric, the Pope-to-be expressed early skepticism of a sun-centered solar system hypothesized by Copernicus. Then as a more senior, self-confident cardinal, he developed a lively, intellectual engagement with Galileo who had developed the astronomical telescope.

Then finally, as Pope, Urban concluded that Galileo's views were a fundamental challenge to the Church, and he yielded completely to conservative, anti-scientific prelates seeking to preserve the status quo.

Like Pope Urban, Bush has bounced all over this issue. During the Presidential campaign, he actually outflanked Al Gore – pledging to regulate carbon dioxide as a pollutant. Neither Clinton nor Gore had ever dared propose that.

Then, as President, he cut the legs out from under Christine Todd Whitman when she repeated his campaign pledge. Later, he unilaterally withdrew the United States from active participation in the climate negotiations.

Refusing to address climate change in 2002 will be viewed by future historians with about as much generosity as we now have for the Inquisition's suppression of Galileo.

What About the Argument that China Will Soon Produce More CO_2 than the United State, so We Should Not Sign the Treaty Until China has Made a Binding Commitment?

Actually, China has done a much better job of reducing CO_2 emissions than the United States has. China's CO_2 emissions fell about 17 percent over the last four years -- while the Chinese economy grew about 7 to 8 percent per year!

The United States economy, though robust, grew much more slowly than that and our CO_2 emission have climbed ever higher.

Because CO_2's climate effects are cumulative – once CO_2 goes into the atmosphere, it stays there for a *very* long time, China and other developing countries rightfully say that America achieved its current prosperity with a powerful boost from a century of cheap fossil fuels. The carbon dioxide this produced is still up there warming the planet. It is unfair to say that China must now be the first to address climate issues. The United States, with its vastly greater wealth and its superior base of scientific excellence should be leading the world, and China will follow.

This is typical of international treaties, in which the industrialized world typically takes the first steps and the developing world follows in later years.

What About Environmental Arguments that Kyoto Was Far Too Weak to Begin With, and that the Bonn Negotiations Weakened It Still Further?

The general consensus among climate scientists is that global carbon dioxide emissions must be reduced between 70 and 90 percent over the next several decades. Kyoto represents an incredibly modest step in the right direction. Again, this is common in international treaties. They are then strengthened. For example, the Montreal Protocol, which dramatically curtailing the release of ozone-destroying chemicals, has now been revised 5 times, and the total release of such compounds has been reduced more than 90 percent.

Environmentalists often have difficulty acknowledging that the step in the right direction is just that: a step in the right direction. The appropriate response is to say "thank you" and then start pressuring for the next step.

What Does Any of This Have to do With Cities?

Everyone in this room has a job description, and none of your job descriptions include, "Solve Global Warming." Many of you also have to stand for election, and you can't afford to look ridiculous. You promised the voters you'd fix potholes and pick up the garbage – not develop your own foreign policy.

Yet, just as with Homeland Defense, you are the ground troops of the global warming issue.

With or without the Treaty, most of the real work will be done by cities, counties, states, companies, schools, and families. Ratifying the treaty is merely ink on paper. The real work is in implementing it. And we can implement it whether it is ratified or not!

The folks from ICLEI will have the real numbers, but last time I looked, more than 100 cities across the United States, and 400 around the world, had started to meet their Kyoto obligations. These include such hard-nosed places as Mayor Daley's Chicago.

I'm proud to say that my home town, Seattle, has not only pledged to meet its CO_2 target under Kyoto, but Heidi Wills – Chair of the Energy Committee of the City Council – is mapping out aggressive plans to **triple** it.

In fact, Seattle City Light has vowed to produce all the city's electricity with ZERO net emissions of carbon dioxide. Through a combination of investments in efficiency, renewable energy, and mitigation, Seattle plans within a few years to be where the whole world must be a few decades from now.

OK, Now What's All This About Jobs and the Economy?

Avoiding climate change presents some enormous opportunities. Investments in efficiency mean that money that we currently export of OPEC will remain at home, multiplying through the economy. Our refrigerators will still keep our food cold. Our rooms will be comfortable and well lit. Our industries will be productive. My hybrid automobile, or perhaps eventually a monorail or trolley or fuel cell bus, will get me to work. And we will all have more money to spend on other things.

But many of the most exciting opportunities are on the supply side, with renewable energy sources.

You Mean Windmills?

Wind energy is now the fastest growing source of electricity in the world. In Class IV and Class V wind regions, wind power is the cheapest source of new power we have, cheaper than natural gas – sometimes as low as 3 cents a kilowatt-hour.

If ramped up, wind could supply 20 percent of America's power within 20 years – much of it in Montana and Wyoming and the Dakotas. When Bonneville sought competitive bids for 1500 megawatts of wind power, it received offer of 2700 megawatts. We are current constructing the largest wind project in the west just outside of Walla Walla.

What About Solar Energy?

Solar is an even brighter global prospect over the long run than wind. Solar cells produce no greenhouse gases, no radioactive waste, no bomb-grade materials. They don't kill birds. They have no moving parts to break. They produce power whenever the sun shines.

Moreover, of special importance to a room full of politicians, the public absolutely loves it. For the last several decades, the American public has proclaimed clearly, consistently, and by overwhelming margins, that it favors solar energy over all other sources. Once again, in a November, 2001 Gallup Poll, ninety percent of Americans supported investments in solar, wind, and fuel cells, and expressed had grave misgivings about deepening America's dependence on fossil fuels.

In the highly contentious field of energy policy, the steadfast public enthusiasm enjoyed by solar energy – compared to oil, coal, and nuclear – is remarkable. Considering that solar energy has remained the neglected stepchild of national energy policy, this widespread, enduring public loyalty is a powerful testament to its attractiveness. At 2:00 this afternoon, Tom Ammiano will describe the recent outpouring of voter support for solar in San Francisco.

Solar cells have just one disadvantage: they currently cost about double what conventional energy costs.

We are Politicians. That's a pretty big disadvantage.
Let me turn again to history.

In 1961, Texas Instruments began producing integrated circuits for small-specialized applications. They cost $100 and replaced a couple dollars worth of conventional electronics – say two transistors and three resistors. There was no meaningful market for these devices outside the very narrowest of niches, and other companies sneered at them.

But the Department of Defense started purchasing these small, lightweight, low-power devices in bulk.

Year	Price	DOD Percentage
1962	$50.00	100%
1964	$18.50	85%
1965	$8.33	72%
1968	$2.33	37%

As the price plummeted, the market took over and was soon dwarfing government purchases. Moore's Law kicked in, and we now have chips that cram hundreds of times more processing power than we available, total, to NASA at the time of the first moon shot into laptop computers that run for hours on a battery the size of a pack of cigarettes.

Without federal government procurement of early chips, the information revolution would never have been born.

With similar purchases, the government could launch a true energy revolution by driving the cost of solar photovoltaic cells down a learning curve until the price hit levels where the global market will take control.

What About When the Sun Doesn't Shine?

There is an emerging consensus that intermittent sources, such as the wind and sun, will almost certainly feed power into the grid when they are producing power, and that any surplus will be used to produce hydrogen to power fuel cells. Hydrogen is easily stored and transported.

When fueled by hydrogen, these super efficient, zero pollution devices are the most promising source of distributed energy for industry, commercial buildings, automobiles, and even cellular phones.

What Should We Do?

That question will be a principal focus all day long. You will hear convincing cases for net metering. For permitting combined heat and power systems, and other distributed generation systems, downtown. For greening your cities vehicle fleets, and using economic incentives to shift traffic patterns. For running a solar ballot initiative. For establishing a renewable portfolio standard, with a special trenchant for solar photovoltaics. For much tougher energy codes for commercial buildings, that cause buildings to be reevaluated whenever they are sold or refinanced. Rethinking zoning to minimize the need for transportation. There are hundreds of intriguing ideas to choose from, and you know best what makes sense for your city – and what you can sell.

My personal favorite is to set up a cooperative procurement network to buy efficiency and renewables at bulk discounts.

Perhaps the greatest problem with America's total isolation on climate change is that the rest of the world is building a future that America may eventually be forced to import. Our companies will not benefit from all the Clean Development Mechanism. Our companies will not be part of the carbon trading system.

This holds a *vastly* greater threat to the American economy than does participation in the Kyoto process.

(A small footnote to the World Trade Center story. Cantor Fitzgerald, a bond-trading firm that lost 700 employees, was perhaps the world's foremost trader of carbon futures. It had already geared up for the post-Kyoto world.)

Conclusion

In the wake of the World Trade Center disaster, much of what is best about Americans came immediately to the surface. Courage. Self-sacrifice. Generosity. A spirit of community, and sharing.

And an almost universal question, what can I do?

The answer to that question is hardwired into each of you by eons of biological evolution and thousands of years of cultural evolution. We all know, in our hearts, what needs to be done. Whenever we have to make an important decision, we all know – when we stop to think about it – the right thing to do.

So, as Michael Jordan would say, just do it.